Lectures on

Pathology -

begun Feb: 4th 1793.

Use of Diseases — 6.

~~Exist by indirect debility 21.~~

~~Most by hysterical wat 24~~

of Heat —— 29.

Began in 1804 Decem^r 10th: 14

—— in 1805 Decem^r 19

—— in 1806 Decem^r: 13.

I have hitherto considered, the human body, as Divines consider the human mind in paradise, viz in a perfect, or healthy state. It remains now that we view this body, as Divines view the mind after the fall, viz in an imperfect or diseased state. sickness & death, like moral evil were the consequence of the loss of primeval innocence.

Gentlemen, V

In my introductory lecture I informed you that I intended to follow in my lectures on Physiology & Pathology the example of the divines who first consider man in a state of innocency, and afterwards describe the disorders introduced into his mind by his apostacy from his Maker. I have hitherto considered the human body only in its healthy state. It remains now that we follow it from the gates of Eden, and examine the changes which have been produced upon it by the Organs & Thoms

and by the storms & tempests to which it was exposed in consequence of the loss of primeval innocence. So ~~this~~ the fall of man we must ascribe the origin of sickness and death. It is true the execution of the sentence of death which was denounced against ~~him~~ man was delayed beyond the day of his Apostacy, but the causes which finally produced it began to act upon his system as soon as he lost the image of his Maker. Every element in nature took part with his offended Creator, and conspired to destroy ~~his~~ life. This operation for a while was ~~retarded by~~ feeble and slow. Hence we read that man for the first 2000 years after the fall, attained to the

great age of nearly 900 years. ~~It was~~ It was not till after the deluge that the life of man was contracted to its present limits. many causes have been supposed to have produced this change in the Duration of human life. — One of the most common & powerful has been the influence of the Deluge on the Surface of the earth & upon the temperature and quality of the Atmosphere —. But other causes seem to have combined with them, for not only the earth, - and air, but the Sea - all our aliments & drinks - all our occupations, & pursuits - and wild & Domestic animals - nay even our very pleasures, all seem to have taken part with the offended

majesty of heaven, to
~~create~~, and have conspired to destroy
the life of man. That Life is the effect
of injunction
~~the~~ therefore, and preserved only by the
opposition
~~action~~ of counteracting stimuli ~~appear~~
~~to be to be~~ is no ~~is~~ consonant to religion,
than to true Philosophy. — It would
seem as if the principle or Quality ~~was~~ that has
been called Life was ~~consisting of~~ the Offspring of a constant
Strife, and that it owed its existence
for 20-30 ~~—~~ 70, or 100 years wholly to the tem-
porary Victory of the stimuli ~~I have~~
in the various upon Animal life,
~~by~~ enumerated, over the causes which
conspired to extinguish it. —
~~In~~ In entering upon the history of
the numerous & disheasing diseases to
which the human body is exposed, ~~but~~

Let us not ~~wantonly~~ arraign the divine good-
-ness, or suppose that the benevolent father
of the human race delights in the
misery of his creatures. This is so far
from being the case, that diseases
are all blessings in disguise, and
in the present imperfect state of hu-
man nature are absolutely necessary
to individual as well as to general
happiness. To console us under a
view of the melancholly ~~list~~ chart of human
misery from this quarter which I
shall shortly lay before you, I shall
briefly mention the important
uses which diseases are probably
intended to answer in the present

V2 Diseases have been the means not only of impelling us to the study of Anatomy, but of promoting physiological knowledge. - By examining the ~~actions~~ functions of the Body in a diseased state, we become acquainted with their natural actions in a healthy state. + in order to discover remedies in them for the cure of those diseases, and ~~thus~~ thus ~~render us~~, make us acquainted with Botany, Chemistry & natural history.

State of things.

1 Diseases lead us to the study of Anatomy, whereby we are led to admire the wisdom ~~of~~ and goodness of the Supreme being which are manifested in the structure of the human body. Without such objects as the removal of diseases, or the preservation of health, who would ever submit to the task of dipsuting dead bodies, a business which is entered upon with horror, and rendered tollerable only by habit ~~or stupidity~~ stupidity. — V

3 Diseases lead us to study the works of ~~Creation~~ Creator in the Vegetable - Animal & Mineral kingdoms, + ~~and thereby we~~ without them we should have no Botanists - Chemists nor Naturalists. These have all been

Physicians without whom the works of nature in these kingdoms would have been explored & unknown and unadmired by the children of men.

4 Diseases furnish exellent opportunities for the exercise & improvement of the mental faculties.

5 These would have been lost for opportunities without diseases. for the exercise of that humanity & benevolence which are the perfection of our natures & which cause us to resemble the great father of the Universe. Hospitals & Dispensaries include a large portion of human misery. If these were abolished, human virtue would languish for want of opportunities

the
~~V more they often render death~~
~~desirable to us~~. Did we relinquish our present
comfortable residence in this world,
in the full enjoyment of health, and
of all the blessings that are connected
with it, death would be terrible to us
in prospect
beyond the possibility of enduring it, but
as kindly sent to
diseases reconcile us to its approach death,
to
may more often render it desirable. But
in many instances,
not only reconcile us to our own deaths, but
of Diseases the pains & sufferings which
desert
they create in our friends, reconcile us
likewise, & sometimes even
to their death, they often

to display the celestial virtue of charity.

6 As the painful heats of summer, & colds of winter, are necessary to render the temperature of Spring delightful, As darkness gives charms to light,—as deformity renders beauty captivating, As evil is necessary to lead us to Good, and as error serves to enhance the pleasure of discovering truth, so in like manner diseases are necessary to impart a proper relish for the inestimable blessing of health.

~~7~~ Diseases ~~life~~ ~~reconcile us to death, may render our passages~~ our passage out of the world less terrible to the sufferer, & less distressing to the survivors.

9. The ~~health~~ diseases by their physical.

cause us to look with solicitude for, & to
rejoice in the moment which by ter-
-minating their present existence, shall
put an end to their misery.

Pain conduces very much to the forma-
-tion promote vigor and activity of mind —
— it informs us in many cases of the seats
of diseases — and above all it is the harbinger
or sign of disease as to impel sick people to
desist from such pursuits as would
aggravate their diseases them; & to seek by
medical aid, for relief.
It is a remedy in many diseases.
The beneficial effects of pain are
best seen in the fatal or disrupting effects
of those diseases in which pain is not
an early & constant symptom, — those are
Cancers — Consumptions — Chronic Inflam.
of the Liver — and Ulcerous Limbs. — In the

9 Diseases by their 9 physical influence upon the moral faculties create and improve human Virtue. ~~and thus add to the general mass of human happiness.~~ ~~But to return~~

Hundreds and thousands of people, have owed their moral habits, and all the happiness that is connected with them both here, and hereafter to ~~an acute [illegible]~~ an attack of a violent - painful, or dangerous Dis= ease.

= It creates passive Virtue wh is far more estimable ~~[illegible]~~ than that which is active. ~~But~~. He is ~~But to return with this short~~ ~~introduction, I proceed to the subject our~~ not a great man ~~[illegible]~~ who can ~~perform~~ ~~[illegible]~~ great things, as he is that can ~~suffer a great deal of great great~~

10th & lastly. ~~but only discusses~~ ~~things~~ We have hitherto mentioned the combined effects of diseases & pain, but pain alone has many ~~[illegible]~~ advantages, connected with it. It ~~was~~ is probably one of the first impressions ~~of~~ on the animal body in the production of life ~~and~~ It certainly.

last, the trees are often destroyed ~~before~~ without pain, and the Cold thereby permitted to affect the whole body with Disease & death. With this short introduction I proceed to our pathology.

From the Universality, certainty & Advantages of Diseases, we are led to consider them as ~~the~~ a ~~part of the~~ natural portion of man not as adventitious ~~and~~ incidents, ~~as~~ but as a part of the natural portion of man. ~~The~~ ~~So~~ The ~~common practice~~ We ~~come~~ put pain in our entrance into the World — ~~to~~ This is so universal, that we are distressed when a child does not discover — nay we are sorry when grown ~~up~~

In entering upon this part of my
fewer resources
Course I am left with ~~out a guide~~.
from ~~but that~~ my predecessors ~~in medicine~~ than from
~~As yet we have had~~ There have
~~none~~ any other branches of medicine.
been but few books published upon
Pathology. Dr Boerhaave began some-
-thing like a system upon it, — but
his Observations ~~upon it~~ are short
& Dr Hoffman
& imperfect. Dr Haller ^ have ~~given us~~
~~has~~ scattered here & there ~~a few~~ in
their works a few pathological facts,
but they do not amount to anything
like a system. Dr Gaubius has given
us a system of pathology, but it
is so filled with the humoral pa-
-thology of his master Dr Boerhaave,

V

There have been many definitions of Disease. It would be a waste of time to mention most of them. It is impossible to deliver one that shall embrace all the properties of Disease in all its forms. The least exceptionable of any that I have met with is that which Dr Sydenham has given in nearly the preface to his Works. It is as follows "Disease consists in the confused and irregular Operations of disordered and debilitated nature". You will I hope see the propriety of this definition when we come to mention the proximate Cause of Disease.

Subject of Convalescence Prognosis &c

and withall is so concise, & obscure
in many parts of it, that a student of
Medicine can derive but little advantage
from it. —

In the wilderness that is before me
Gent. I ^ venture without a guide
or compass. — I shall therefore
pursue Medicine on natural works and ~~endeavour~~ to lay before you a
in ~~the~~ any journey, ~~& lie before me~~ the ~~a~~
System founded on ~~my~~ principles which I ~~as to the~~
~~have delivered in my~~ Physiology. —
By Pathology I mean that Science
which treats of the ~~Causes~~ Seats — & Signs of diseases.

V ~~These causes have been divided into~~
~~remote — predisposing — exciting — and~~
~~proximate. They are all links —~~
~~of one chain.~~

said, he did not believe that there existed such a creature as an Atheist in the world. "You are mistaken said one of the company, (rising from his chair) — I am an Atheist." — Equally absurd & equally bold would that man be thought, ~~to be~~ who should in many societies of physicians arise up and call himself a theorist in ~~the~~ medicine. In ~~this~~ ~~assembly of~~ the ~~this definition you set aside~~ this assembly which I have now the honor of addressing. ~~I feel no~~ it is ~~no mark of courage to make that declaration.~~ composed of young gentlemen whose minds are as yet uncorrupted by ~~the vices of the~~ ~~or the love~~ ~~profession~~ of money, it requires no courage to make that declaration. I profess myself publickly a theorist in medicine. I came here to teach the theory of medicine, and you came here to be taught the theory of medicine. In other words, to exercise your discernment over the Brutes in reasoning upon the causes & diseases.

To understand what is meant by a disease it will be necessary to observe that it is a deviation from that state of the human body in which all the functions of both Mind & body are performed with perfect ease. That is health.

By a disease I mean a change in the proportion and figure and order of motions in the solids and fluids of the body. also the place & quality & motions in the particularity - or deficiency of the matter in the faculties of the mind as well as the body.

The causes of diseases are divided into remote - predisposing - exciting or occasional - and proximate. They are all links of one chain - but sometimes two of them so blended together as not to be distinguished from each other. and

You are not to suppose that every disease is produced by these causes, in the order I have mentioned them ~~The remote and the exciting causes are~~ only they are always independant of each other. The remote & the exciting, the predisposing causes are often blended together, & act at the same time. Eg: ~~strong~~ Drinking inducing Intoxication is often a remote & exciting cause of a fever, & predisposition to a disease ~~ingrowen~~ from debility is often so great as not to ~~up~~ require an external cause ~~action~~ to bring it into ~~family~~ action. The circulation of the blood, or a single act of the mind is sufficient for this purpose. Not ~~entire~~ again - miasmata - are the remote cause of a bilious fever - The debility induced upon the system is ~~thus~~ predisposing cause - This ~~for is but the~~ debility is often aided by fatigue from exercise, - Intemperance is its exciting cause, & a convulsive action in the blood vessels its proximate cause. ~~By proximate cause I mean with Gambius "Ipso morbus" the disease itself~~

~~Sometimes the same cause becomes~~
~~both~~ the ~~remote and predisposing cause~~ —
I shall briefly illustrate what I mean by
each of them. The ~~alternate~~ action of cold
is the ~~one~~ remote cause of inflamd fever, ~~pneumony~~ —
debility induced by this cold is the
predisposing cause — the heat of a stove
room, or of the vernal sun ~~is~~ the exciting
cause, — and a convulsion in the arterial
system is ~~the~~ proximate cause of
this fever. — The pain — heat — thirst ~~&c~~ & ~~&c~~
are all symptoms arising of the proximate cause. ✓
The investigation of the ~~proximate~~ causes of
diseases will naturally lead us to speak
of their seats — ~~their~~ the history of symptoms belongs
to ~~another profession~~ the practice of physic. I shall mention
no more of them than are necessary to

~~Before I enter upon the consideration of the [illegible] of the proximate cause of disease.~~

V By the proximate cause of disease I mean with Gambius - "ipse morbus" "the disease itself". I am aware of the Objections to which this account of the proximate cause of disease is liable. But it is much

~~D~~ ~~The influence of certain systems previously to~~ ~~be after the birth~~ of a child. —

less exceptionable that that which has been substituted for it - viz Excitability, for diseases I shall say hereafter ~~of~~ sometimes come on without its intervention, or even the existence of predisposing or remote causes. ~~I shall say hereafter~~. —

In considering the proximate cause of disease, I ~~shall~~ in former years ~~have~~ as well as in my ~~late~~ publications I have endeavoured to avoid giving offence

demonstrate their seats & their causes.
Nor shall I ever mention the remedies
which are proper to remove diseases
except when I am forced to do it for the
same purpose. In treating upon the
subject of pathol? I shall follow the order of the
syllabus. The following is the order I have
adopted for my lectures on Pathology.

1 Remote causes. These will include
the influence of the following circumstances
on our bodies. 2 Air -
3 Aliments - Condiments and
drinks. especially in Children.
4 Exercise & rest.
5 motion & rest - Hygeo
6 Sympathetic matters introduced
into the system. These are
(a) Contagions.
(b) Poisons. -

by using as few new terms as possible; hence I have adopted, the sound of the terms of Dr Brown. The use of those terms ~~has~~ with different ideas annexed to them from Dr Brown, has I fear produced some obscurity in my account of the proximate cause of disease. It has moreover exposed me ~~to what I feel to be a reproachful~~ to the epithet of being a Brunonian, by superficial readers. For which reason To avoid both of those inconveniencies, I shall endeavour to convey the same ideas formerly taught upon this subject by the use of general terms which I ~~shall~~ hope will render my opinions more intelligible, and secure me from the imputation ~~of being a Brunonian~~ that I have mentioned. —

40 to p: 200!

prop: I.

(c) Worms. - &c

(d) Anomalous substances taken into the alimentary canal - lungs & nose

(e) Anomalous substances applied to external surface of the body

7 ~~6~~ The organs of motion & rest, sleep & waking.

8 ~~7~~ ~~Organs~~ Faculties of the mind & the Venereal appetite. connected with which are

9 ~~8~~ Different States of society

10 ~~9~~ Different Governments

(11) Different religions. —

(12) Different employments.

(13) Different Amusements.

14 Peculiar Customs - as Infanticide &c

~~(14) Different conditions in life as to celibacy & widowhood.~~

(15) Unhealthy Customs.

(16) an injudicious confidence in

Quacks & in the Operations of Nature.

(17) The imprudent use of certain remedies without or contrary to the advice of a physician, - as Opium - Bitters - Nitre

&c 18. Sympathy

(19) Time - which always brings with it pain & disease. It was the only power superior to the Late King of Prussia owned in his last illness. -

II The predisposing causes of diseases natural or artificial - the first are, 1 Different Ages as Pregnancy.

(a) Infancy.

(b) Childhood

(c) Puberty.

(d) Adolescency.

(e) The period in which the Arterial plethora yields to the Venous supposed to be about 36 Year of life -

(b) The period of the ~~c~~ operation of the causes. —

(g) Old age

(h) The different conditions of the system in single and married life

Temperaments.

(i) Deformity in size - or configuration of any part of the body.

(k) constant weakness of a part or of the whole, or ~~weak~~ stamina

The predisposing causes which are artificial are all such changes in the system as ch have been mentioned. It has been happily called by Dr Brown - the range between health & the proximate cause of the Disease or ye disease itself. —

III ~~It will be~~ The exciting causes of disease are - whatever acts upon ye indisposition so as to produce ye disorder. All the remote causes may

become exciting causes under peculiar circumstances so as to act upon each other. E.g: Fear may act upon the debility produced by intemperance so as to induce a fitt of the gout. —

IV. The proximate causes of disease are 1 general - ~~affecting~~ These affect the whole ~~system~~ body (a) thro' the medium of the Sanguiferous system as in fevers. (b) thro' the medium of the nervous system as in ~~convulsions~~ all the diseases of the nerves from the highest convulsive disorder as Tetanus down to Asphixia. —

(c) thro' the medium of the Alimentary canal as Dysentery - Colic &c.

(d) thro' the medium of the Lymphatic System as Dropsy & Scrophula.

appear / in Pain.

V The signs of diseases ~~are taken~~

(2) ~~from~~ in the ~~Color of the skin~~ countenance.

(3) The tuith

(4) Respiration, appetite 5th

(5) The state of the excretions.

(6) The pulse

(b) Thro' the medium of the blood, as in Scurvy.

(f) Thro' the medium of the brain as in all the diseases of the mental faculties.

2 They are partial or local - These affect (a) The skin. - (b) The lungs & trachea (c) The nerves. & brain (d) the heart & Arteries. ~~(d) The lungs trachea~~ (e) The Senses. - (f) the brain, as the seat of too much wakefulness or sleep. (g) The stomach & alimentary canal ~~(h)~~ (h) The lacteal vessels. - (i) The glands (k) the bones (l) The organs of generation ~~(k)~~ the Uterus. (n) every part of the body - in wounds & tumors. -

3 Old age

4 Death. ——V

[V you are not to suppose that this ~~link~~ chain of causes occurs in every disease, or in the order I have mentioned them. There may be remote & proximate ~~accident~~ ~~really no~~ ~~direct~~ ~~predispo~~ & predisposing — as in the small pox. The predisposing too often occurs without a remote cause — as the hemorrhage from the nose in puberty without ~~accident~~ intemperance or exercise of any kind. — Where a remote cause acts on predisposition it should be considered as an exciting cause.] [Then the ~~predisposition~~ may be a proximate cause E.g: weakness from too much exercise or rest, is a disease. —

This syllabus is a yet very imperfect. I hope to give it to the public in a more correct state with a short text book of the lectures on Physiology next year. In enumerating diseases I shall often be obliged to blend the remote and exciting causes - & sometimes the predisposing & proximate causes together. & I shall often be obliged to refer to the same facts under the different heads of the causes. But this will serve only to connect our history more closely together, & to impress it more firmly on your minds.

Before I proceed to consider our first head, - I shall briefly

remote - predisposing

The ~~debility~~ and the proximate causes are here blended together in a close & quick succession. The ~~predisposition~~ debility is evident from the languor - coldness ~~debility~~ Cupidity which ~~increase~~ precede these diseases.

deliver a few general 21 propositions. ~~most~~ all

I all diseases which ~~are produced without~~ ... ~~by predisposition depend upon~~ depend

on predisposing debility. I except here only those which arise ~~diseases~~ from ~~contagion~~ - wounds - and some local diseases. ~~Even the Certainty Violence of~~ Contagious diseases do not act ~~is much influenced by debility~~ untill they have first induced debility. This debility is ~~of~~ held by Dr Brown to be two kinds. Viz direct. - & Indirect. To understand the meaning of these terms it will be necessary to fix the healthy point of excitement in the System at a certain degree upon an imaginary scale. I shall chuse for this purpose the No 50. -

~~Whenever this~~ Here the System is Stationary from an exact balance between Stimuli and its excitability. When

The symptoms of both, are so exactly alike, that they can be distinguished only from their causes.

there is an Abstraction of Stimuli the System falls below 50 — in which case ~~where there is~~ direct debility is induced — when there is ~~an~~ great excess in the force or number of Stimuli indirect debility is induced. these two Species of debility have been consid: ~~as in some cases~~ as diseases, by Dr Brown, but this is an error, for ~~in general~~ they only predispose to diseases. + the range of predisposition may be confined to 10° ~~above~~ below & 10° above the point of healthy excitement, when it descends ~~extends~~ then below 40°: or extends above 60°: it may be considered as very near to an actual disease, for ~~this is~~ the System seldom remains long in this predisposing ~~state~~ state of ~~direct & indirect~~ debility. — ~~for~~ It is a Condition of the System that

Sudden diminution

The loss of excitement suddenly whether by causes which produce direct or indirect debility is succeeded by an increase or accumulation of what is called Excitability - that is a disposition to be acted upon by the Stimuli which with preternatural force, by Stimuli or Irritants which produce only natural motion in the healthy state. The more sudden the diminution of the excitement, the greater the excitability which is produced. There appears to a transmutation of excitement into excitability in the production of diseases, & the cure of them in many cases consists in arresting, first the conversion of this excitability back again by means of Medicine into excitement. - When debility whether direct or indirect has continued a great while

as I shall
seldom fail to invite a discuss ~~of another~~
proved
~~kind to be entertained~~ hereafter. ⊙ +

But to ^action I consider the existence of this
indispersing debility & its consequent capitability,
in nearly all
general Diseases as the corner stone of
ring system of physic. I invite you
therefore first to examin it thoroughly.
If you resist it - ~~examine~~ the whole
fabric I have endeavd to build upon it,
most
last trumble with it. — I ~~to~~ call upon
~~to attend~~
them only to attend to the manner in
which most of the remote causes to be described
presently act on the system - and I think
you will perceive that it is only in
one way - viz: by inducing direct or
indirect debility. ⊙ +

20 P. 23 ~~I shall explain by entering~~

it is followed by a diminution of excitabi-
=lity as well as excitement, - hence the
necessity of strong stimulating powers to
~~create~~ augment a change of them to act upon the
remains of the excitability. There appear
to be certain latent resources for this excit-
=tability in the system - and so abundant
are these resources that I believe few
men die without carrying with them
to their graves such a portion of it as
would have lasted them for many years.
- Excitability & excitement are in different
proportions to each other in different stages
of life. But more of this hereafter. - The
~~cause~~ total destruction of excitement & excitab?
~~cause~~ is the proximate cause of death, or
in other words, death deprives ~~living~~ animal matter
~~to a level with earth and other dead~~
of its power to emit those motions & sensations
~~creation~~ call life. no more happens then to the

I shall begin by mentioning Remote Causes 24
the influence of certain corrupt practices
and Customs which Obtain in the treatment
of infants, and these we shall find are
of a debilitating nature. ——— and here
we shall find the words of the text veri-
breath
fied. "The child, the moment it receives its
" Receives the lurking principle of death.
" The fell disease, that must subdue at length,
" Grows with our growth, & strengthens with
our Strength! ——— Even before it comes
into the world it is predisposed to disease
by the debility it contracts from the
indolence & luxury — ill temper — Amuse-
ments — to hard labor — and penury of
its mother, for few women pass thro
the period of pregnancy without being
the subject of one or more of the

body in Death, than what happens to a bell or a violin when they are deprived by any Accident of the power of emitting sounds, or musical tones. 20 to 23 ## This is a bold proposition, but it follows from principles formerly established. — Let us not remember that are no half truths in medicine, any more than there are in Government. — Vitality in a bill is as absurd as Sonorobility or Musicality in an instrument of music. — Thus (says Empiricism) we banish simplicity from every thing, even from that most simple of all creatures — a new born infant.

× I am led to support the opinion I have taught of the cause of animal life, as life by my religious principles, than I am by my principles in medicine. — Life independent of Stimulus, forces Us to admit a self-existent principle, which [illegible] Organs

evils that I have mentioned. But

X, Children are often ~~exposed~~ predisposed
by debility
to diseases from injuries received in pas-
-sition from ignorant or negligent
Midwives. —

2 The Custom of washing the tender
flesh of new born infants with Ardent
Spirits – Wine – or even Soap & water en-
-ates a predisposition to many diseases. They
all Stimulate, & of course produce sub-
-sequent debility.

3 The first diet of an infant is generally
of a debilitating nature. ~~Improper~~. It is either insipid in ~~quality~~ quantity
or of an unwholsome quality from the
mixture of Spices – Wine – ~~oil~~ or oily
substances with it. By Stimulating it
induces ~~indirect~~ debility.

4 The first drops of Children ought

Supreme creator out of the question. It establishes the old Epicurean doctrine of the eternity of the world; for if motion or life can exist independant of remote causes or principles, I see no ~~more~~ difficulty in admitting the eternal existance of the world from a power inherent in & necessary to matter. But the doctrine I have delineated plans the Deity upon the throne of the universe. It makes him what the poet calls him "the father of life"; or what the Scriptures more emphatically describe him to be "the only living & true God". It moreover plans Man in the humble situation ~~in~~ of a dependant creature - ~~&~~ indebted to ~~his~~ the ~~all the~~ elements for his existence every moment, - ~~& makes his~~ and justifies the comparison ~~life a vapor~~ of his life to a vapor - or the grass of the field. - ~~and~~ It shews him to be what Shakespear - "a mere thing, a poor - bare - forked Animal".

caps - swadling Cloaths - Stays - &c all
tend to weaken the body & predispose to
diseases in every subsequent period of
life.

5 The Use of Ardent Spirits to allay the
complaints of Children is a source of
great debility, & subsequent diseases.

6 The influence of the Milk of Mothers
negligent in their diet, or wholly devo-
-ted to pleasure is a fruitful Source of
debility & diseases. — I once knew death from
convulsions in a child that had sucked
a Nurse who had drank ½ pt of Rum, &
I have seen the Colic many times
from acid aliment taken in too
large a quantity by Nurses or Mo-
-thers. —

7 The premature application of the Mind to study in Children & in particular to difficult - Abstruse - and unprofitable branches of learning, as also the confinement of Children in close ~~Schoolrooms~~ Schoolrooms, and the tyranny of Schoolmasters all become a Source of bodily & mental debility & disease. I have been called to many hundred Children who have been sent home sick from a crowded School, & I think I have seen a morbid excitability induced in the minds of Children by ~~the being~~ being the subjects of a despotic Schoolmaster.

8 The Amusements of Children expose the body to many debilitating causes, such as jumping - falls - &c. ~~roots of the trees~~ They are numerous

V & Debility is acquired in every subsequent ~~by all the natural~~ stage of life by all ~~remote and exciting causes of disease~~ causes which lessen the natural excitement of System by the abstraction of ~~the strength of the body, or by~~ or action. that is abstracting a portion of those natural stimuli which support life, or by reducing the excitement, and Dissipating a portion of the excitability of the System by the gradual or Chronic application of an unusual ~~Quantity~~ of Stimuli – or ~~suffocating~~ suspending it by the sudden application of Stimuli – ~~thereby~~ producing ~~what~~ ~~I shall call~~ a sudden dissipation of the System.

I shall enumerate the different causes which induce ~~both~~ all these kinds of Debility hereafter. Debility whether natural or acquired is – ~~to~~ 10 : 15 ·

~~in infancy~~ exposed to falls from the arms of their ~~nurses~~ mother - to being pinched - thumped - or shaken by their nurses, or mothers. I ~~many~~ many of the cases of Hydrocephalus that I have known, have arisen from falls, or contusions on the head. I ~~have~~ have known one case ~~from~~ from a stroke given to a child with a brush by a passionate mother - which terminated in death. This native and ~~or~~ early acquired debility: go to p 15 ⊙

X We come now to inquire into ye influence ~~diseases~~ of the air ~~produce~~ in producing diseases. It acts 1 by its sensible qualities. These are heat-cold moisture & dryness, Rarity and Density. Each of these is varied by the suddenness of transition of one to the other, ~~and~~ by local situations - and certain seasons and months. 2dly The air ~~acts from~~ induces diseases from

U Or. to use the words of lately coined by Dr Miller of Newyork - "Koino-miasmatic" & "Idio-miasmatic" exhalations. — The former signify - exhalations from exposed or public places - the - latter from private or personal Sources.

V Matter in the air the properties of which are unknown, but appear in its effects upon the human body. and many Other as yet unknown matters.

This is a most important Subject, and should command your closest Attention. From the Sensible or insensible Qualities of the Air, are derived nearly all febrile diseases, and there is scarcely any Other Disease that is not more or less influenced by them.

certain impregnations which are mixed with it — these are 1 miasmata — 2 the air which has been destroyed by respiration. ~~3 The hydrocs~~. 3 Sambroon — or Harmattan winds. 4 The smoke of certain burnt substances. 5 the effluvia of manufactures. 6 the perspiration of plants. 6 to be one more not to be lost under any of the above heads — ment[d] by Bruce viz: Samiel. ~~Celerity~~ ~~Oxygen~~.

1 Of the insible qualities of the air. — ~~of Heat~~ notwithstanding the human body is formed so as to exist in various degrees of temperature of the air, yet there are certain degrees of it which are most favourable to health. Those degrees are different in different ages. From 62° to 75° in middle life are most salutary.

Beyond 45 higher degrees of heat become
unpleasant and agreeable. — Heat is an
universal stimulant ~~but~~ to all Animals,
and perhaps no animal exists without
it. Different degrees of it act on the powers
of life in different Animals — Some
in 32°
the freezing point, or for what we know
many degrees below it, may be to some
Animals what 75° are to the human
body, — for heat & Cold are both
relative terms — and the extremes of
both are as as yet unknown, as well
as the full effects of both on animal
life. — There is however in every con-
-stitution a certain degree of excitement
produced by heat which constitutes its
healthy point. This degree is nearly

the same in persons of the same age, ~~and in the same forms.~~ ~~who~~ in whom however the heat exceeds this degree it always induces ~~indirect~~ debility from action. But this degree of healthy excitement is raised not only by age, but by the ~~warm~~ temperature of the weather which has preceded it. I once known 77° on the 17th of March 1791 produce universal langour in the citizens of Philada from indirect debility. The same degree of heat would have been gently & gratefully stimulating had they occurred in the months of July or August.

~~This~~ The ~~indirect~~ debility ~~induced~~ by heat shews itself in the following ~~diseases~~ ways. In the Arterial system it produces langour - excitability, & a disposition

2 Heat acts when combined with the solar rays in a peculiar manner on the brain — producing it is called Inso=lation. This is sometimes suddenly fatal — but it more commonly ~~where the indirect debility~~ according to Dr Girdlestone's acc: of the ~~is overcome it was in 1 Hennevey~~ Spasmodic diseases in India — 1st a Synocha ~~or inflamm: of the brain~~ fever — 2 a Phrenetis — 3 Somnolency — and 4thly in its highest degree — cold sweats convulsions & death — It is remarkable this disease is unknown in Africa from the Uniform of its heat, & insensibility to it.

Sir Robert Wilson relates many curious facts of the effects of the warm air 116: in Egypt upon the British Officers & Soldiers. It produced faintness 2 difficulty of breathing — spitting of blood, & falling down — also blindness, or false vision such as the sight of camels — horses, & all kinds of animals moving before them. It was always increased by standing still, & lessened by motion. Eating increased it. ⊙

to be acted upon by all the causes which induce fever. At 80° it is most disposed to inflammation when long protracted. discovered by Dr Caldwell. V

3 upon the nervous system it produces excitability, & a disposition to be acted on by all the causes which produce convulsion & syncope - hence the greater frequency of tetanus Hysteria in warm climates, & warm weather than in cold, - hence also the frequency of fainting in the same countries & seasons. Heat beyond the healthy point of excitement dulls the sensation of touch - ~~and vision~~ affects vision - hence we read with difficulty in hot weather. It affects the brain with giddiness sleepiness in the day time, and when less stimulating so as not to produce ~~indirect debility~~ partial depression - it produces wakefulness in the night. VI.

4 Heat acts upon the muscular fibres

V ~~Heat~~ ~~with~~ also an indisposition to ~~mu~~ voluntary motion. - hence ~~the~~ it is said exists a necessity ~~for~~ domestic slavery in all hot countries. —

To Heat acts upon the Lymphatic System - disposing it to absorb more than usual - hence costiveness in going to a warm climate ~~is~~

V This sweat has a saline taste.

~~It is~~ A ~~mild~~ Russian officer who had travelled a great deal in warm countries informed me y: had never seen any person discharge sweat from the back of the hands till he came to america. It is remarkable this sweat ~~wipes~~ wipes the marks of the smallpox - many years afterwards.

+ Heat produces eruptions or small boils on the skin. This I have often observed in hot summers especially in children. Burnis takes notice of y:

first activity = their languor & weakness

and produces in them ~~weakness~~, and an involuntary disposition to motion, particularly tetanus. ~~it is said of domestic slavery in all hot countries~~

5 Heat acts on the Stomach and alimentary canal - producing in the former at first according to Dr Clark excess, afterwards a want of appetite, more especially for fresh animal food, - and in the latter a disposition to Colera - & Dysentary.

6 Heat acts on the Skin producing in a certain degree profuse discharges by sweat. & In a higher degree it produces a universal dryness. This last sometimes occurs in reapers, & unless relieved is always followed by sickness & death. This dryness of the skin is often brot on by sleeping in the open air in the shade in the East Indies, and generally ushers in the Hepatitis of yt country. Heat further - discharges the white from

same effect from heat in the East Indies. The
[illegal] especially heat of hot climates
sometimes
-ates are produced by it, but they
sometimes depend as I shall say
hereafter on another cause. — They
that gives
the fluids in fevers — a centrifugal determination — hence
tubas & other dwellings in the plague — & not in cold climates,
This brown or dark color is not on
the skin only by the heat of the sun. Hence
we observe Smiths & Cooks to be as fair
as other people. The fairer the skin, the
less apt it is to acquire a dark color
from the rays of the Sun. The color
of the Blacks has been ascribed to the rays
of the Sun. It is certainly one of its causes.
But several other causes concur to produce
it, as diet - disease & state of society. no No
difference is perceptible between the children of
parents till 8 days after birth except in the
scrotum and glans penis which at birth
are of a dark color.

the color of the skin, and disposes it to a ~~dark~~ brown or dark color. ✓ go to 12. 10: 37. or bring it in under this head.

§ Heat invigorates the venereal appetite. Hence the early marriages of females and the late fruitfulness among males w.^ch occurs in warm Climates. Count Struensee who lost his life for ~~attempt~~ striking treason against the ~~the~~ present king of Denmark says in his Confessions that he had formed a design to settle in the East Indies ~~the~~ on purpose y.^t he might enjoy in ~~a~~ higher degree this animal gratification. It is a curious fact that this appetite should flourish under ~~the decay~~ a weakness of every part of the system I shall hereafter mention some facts that show y.^t it exists with peculiar force in the ~~direct~~ as well as in

The effects of heat on the Venereal appetite in middle latitudes is

appears from the greater number of births which occur in the winter months than in any other season of the year. Dr Boerhaave supposes from this fact, that longevity is connected with birth in cold weather, - but if more persons have lived to be old, who were born in winter than in other seasons, it is owing to the greater number of births in that season than in any other. In relation to the influence of the vernal sun in propagating his species, I can say for a while to a level with the lowest part of the animal creation. Fish are influenced by heat the most of any animals

1 Heat by increasing perspiration shortens the duration of the discharge of the menses in Women.

10 Dr Pinkard remarks a singular fact of the effects of heat in the West Indies upon the body with respect to

the indirect state of debility of the system increases the secretion & excretion of bile.

Heat acts on the blood disposing it to ~~putrefaction~~ I say disposing to putrefaction only; for putrefaction. ~~This putrefaction~~ is prevented by the bile according to Dr Young - hence it is rendered more ~~plentiful by in hot weather than cold~~ & hence putrefaction according to Dr Lybrits ~~any Obstructions~~. Strange that the experiments does not take place in the blood. product of a putrefactive process should check the further progress of putrefaction. But this is nothing new in the works of Nature. Nitre ~~restores~~ the offspring of the putrefaction of vegetable & animal matters preserves both of them from putrification & the green matter which appears on stagnating waters, are vegetable productions which yield a dephlogisticated air which purifies ~~Carbon~~

ships. He says no drowsiness in the morning — here he says "to wake & to rise — are the same thing" in the West India Islands. —

the air which exhales from ỹ putrifying
waters. — What makes Dr M Leay's
theory more probable is, that the bitterness
of the Bile from bitterness we see pro-
duced by putrefaction in the rotten
parts of an apple, and of many
other fruits. — This has often been remarked
by Butchers in the cattle they kill in the summer months.
Sometimes this bile is
excessive in quantity — or excessive in its
acrimony, in both cases & sometimes
it finds its way into the stomach — in
all which cases it produces diseases,
hence the frequency of complaints of
a redundancy of bile in warm cli-
-mates. But it produces diseases more
frequently from being vitiated by
a mixture with marsh miasmata —
hence the frequency of bilious fevers

10 iv

Heat acts upon the eye sight - hence the frequency of opthalmia - Cataract &c gutta serena in warm countries. Opthalmias were very common in the warm dry summers and autumn of 1793. They are Universal in Egypt.

13th It acts is less unfriendly to old than young people - hence the practice of the old Romans & modern Portuguese of retiring to a warm climate. But when so intense as to produce great depression, it is often suddenly fatal. - It is a cause of many diseases in children especially under 2 years old. hence 1/3 of all who are born die under the period of life. - ~~The influence of~~

under the head of the effects of heat upon the body, I shall include the influence of what are called the Syrocco winds. They are common in Aleppo and in some parts of Italy. They derive their heat from passing over immense beds of sand heated by the Sun. They are extremely debilitating, and dispose to many diseases. Brydone describes it as having occurred at Naples while he was there, and speaks with great pity & contempt of an Italian Marquis whom he met with a morning walk supporting himself under the pressure of this air by means of a smelling bottle. —

15 and lastly the influence of = p 38-

in Countries exposed to these exhala-
-tions. ~~#~~

12th Heat by producing ~~indirect~~ debility acts upon ~~all the~~ certain faculties of the mind, producing weakness in the memory - understanding - and the moral faculties - Perhaps the imagin^n. is not impaired by heat - It is probably ~~may be~~ invigorated by it. ~~Buffon~~ Naturalists ~~says~~ say that hot Climates weaken genius, & check invention, but that they encrease the powers of imitation: This seems to de-
-pend on a correct state of the faculty of taste. ~~Thomas~~ By the languor it induces on the ~~body~~ mind - it disposes to the Use of Opium - tobacco - & strong drink. + of the Absolute effects

Thus far have I spoken of heat ~~as~~ acting in ordinary Cases without any previous preternatural excitabi^y. Let us next attend to its relative effects in the System. ~~Heat~~ Where the System

effected only by the heat of the sun. No Other heat produces it. Hence Smiths & Cooks are as fair as Other people. The fairer the skin, the less disposed it is to acquire a brown Color from the rays of the Sun. —

= heat extends so far as to lessen the Density of the solids of the body – hence a[illegible] European of when weighed in the opposite ~~bright & ugly~~ Scale to a Chinese or a Hindoo is always considerably heavier. Even the ~~his~~ bones of a person ~~are specifically~~ who has lived & died in a warm Climate are specifically lighter than the bones of a person who has lived & died in a cold Country. —

~~Being in hair the effects of Grows~~

~~Winds p. 126 No. 3.~~

has been previously exposed to cold, it acts more certainly, and with ~~much~~ a greater force ~~proportionally added to~~ varied by the disproportion between the temperature of the body and the heat which is applied. If one knew 77° on the 17 of march 1794 produce universal ~~languor~~ debility and dyspepsia on the citizens of Philad.a from ~~indirect debility~~. The same degrees of heat would have been gently & gratefully stimulating had they occured in the months of July or August. — Inflam.y fevers seldom fail to follow the sudden action of even moderate heat when it has been preceded by cold. ~~Hence~~ the frequency of these fevers in the Spring, & in open winters. The old saying that a green

+ This is the case in the nights in Summer after a day in which the ☿ has stood at 85°. – The coolness of the air was felt

V It is equally remarkable that the weather which becomes moderate from being very hot, excites the sensation of cold & produces diseases + as above was sensibly felt at Naples by Blydone when the ☿ after a Sirocco suddenly fell from 112° to 50° + Dr Snodyce felt it exquisitely coming from 100° to 45° + Smiley [illegible] by Humboldt when it fell from 90 – to 80°. – by sudden Abstractions by heat

Often induces fever either by repelling perspiration, or 2 increasing the action of some other stimuli Eg. in the yellow fever. The coolness of the night air after a hot day produced in the soldiers who marched from Suez to Cairo, such a numbness in their limbs that they were scarcely able to move the morning afterwards. 3 Destroying the Equilibrium of the System &

Christmas, or a Xmas in which the ground is covered with Verdure, makes a fat Church yard in the Spring is certainly well founded. I have several times observed it in this city.

It is remarkable that weather uniformly warm seldom produces diseases. It is only when it is varied alternately with cold or moisture that it is most unhealthy. The most healthy summers I have known, have been the warmest. The Summer of 1766 in Rome we so plaud upon now as an uncommonly warm season, & yet says the person who describes the heat of that summer, "our town was uncommonly healthy, & all our hospitals were nearly empty."

thus inducing a fever without the coo=
=peration of an irritant, or exciting
cause. ~~Sentence beginning "It has been" crossed out~~

It has been remarked that the body
suddenly
suffers much less in passing from
extreme heat to cold, than from ex

But the Autumns which follow those hot summers are often marked with bilious diseases. It is thus we see diseases are generated in one season, & produced in another.

Again. It is remarkable for that Heat when long applied to the body, produces the same insensibility to its Cold, that it does to itself. The West Indians bear the Cold of our Climate for a year or two better than our natives. It is commonly said that they require a year or two to be cooled after having been exposed for a number of years

V How shall we reconcile this fact with the ~~sudden~~ painful sensation of cold felt by persons ~~in~~ passing from a heat of 112° - to 80° formerly mentioned? I answer, in this case the insensibility is previously accumulated by ~~sudden~~ ~~transition~~ by the heat, & the transition to the ~~last~~ or rather grades of heat below it, is so sudden as to produce the sensation of Cold. In the case of the West Indians the insensibility to heat is blunted, by the long application of a vertical sun, and the cold of our climate is applied so gradually to this bodies, as not to destroy this insensibility for two or three years.

Upon my giving this solution of the above phaenomena to Baron Humboldt in his late visit to this city, he communicated to me the following fact. 300 men work every day from morning till

to the intense heat of a vertical

~~sun~~ sun. V

In producing all these effects on the body, the heat often rises 10° & even 20 degrees above the ordinary heat of the body, & yet life is not extinguished by it. The reason of this I gave when I treated on animal heat.

If such be the numerous and morbid effects of heat on the animal body, it is natural to inquire ~~how~~ why the ~~Creator of the world~~ Author of nature placed man ~~in~~ immediately after his creation in a warm climate, and why

evening
~~night~~ in a mine over medio 1900 feet below
the surface of the earth, in which the temperature
of the air is at all times from 100° to 102°. They
come out of this mine in the evening, & pass
the night in an atmosphere in which the
heat is between 40 & 50°, yet they never take

V. It was in similar climates that
men have attained to the greatest
degree of longevity.

cold, ~~and~~ ~~are~~ more they enjoy good health. This insen-
-sibility to the sudden change in the atmos-
-phere must be ascribed to the intensity
of the heat in the mine from time destroying all
sensibility both to itself, & to cold. —

Cold ~~is more~~ certainly induces disease
when it acts suddenly upon bodies exposed to an uniform
~~heat~~. but not intense heat. ~~Hence~~ Its morbid
effects are so general, that Dr Moseley
considers every person in a West India
Island as constantly ~~exposed~~ predisposed to
to disease from cold. Hence the heat at 80
predisposes so much in our Climate to Yellow Fever.

human nature has been more honored, in hot countries than in any other parts of the world. ~~In this~~ It was beneath the emanating sun of Egypt that Arts and Sciences acquired a perfection that has ~~never since~~ astonished all succeeding generations. To account for these facts it will be necessary to observe that where men avail themselves of the aids of experience & of human reason, there is no climate necessarily unhealthy. The natives of Africa enjoy good health, & grow old in the neighbourhood of factories which prove graves to the Europeans who settle among them. The aborigines

has been observed that
= It is ~~a remarkable~~ the body suffers
suddenly
much less in passing from the extremes
of heat to cold, than from the extreme
of cold to heat. —

~~Cold creates~~

of Hispaniola & Jamaica knew nothing of the diseases which have since ~~extirpated~~ destroyed so many thousand of the descendants or fellow citizens of the men who at first extirpated them. Even those ~~but~~ civilized inhabitants of warm countries who live agreeably to reason, enjoy good health & attain to long life. Mr Townsend tells us that a Spaniard in madrid ~~is~~ ~~conceals~~ himself in a close and dark room during the heat of the day, and thereby avoids all the diseases of warm weather. His bed - his drinks - his diet - his apparel - &c are all accommodated to his climate - while the Englishman

who visits this Country, & neglects
all these precautions, generally pays
for his temerity by submitting to
some of the diseases which have been
mentioned. — I conclude therefore
that most of the diseases ~~of~~ which
have been ascribed to heat may be
resolved into certain errors or irregu-
-larities in diet ~~drink~~ drink - drefs - exercise - or
passions of the mind. — The effects of

I go on to observe that heat ~~produces~~
upon the body are much varied by ~~being the cause of~~
~~different effects according as it~~ is combined
with Dryness or moisture. In the deserts
of Arabia & Nubia Travellers often
feel a difficulty of breathing which
is relieved by inhaling a little
moisture from a Sponge which

V ~~Dry~~ There is a material difference in the diseases of some countries according as the heat of the weather is accompanied by Dryness, or moisture. Dr Clark says the diseases of a dry ~~heat~~ hot season in ~~the~~ the East Indies are Dyarrhœas - Colics, and Choleras & Hepatites of a mild nature, while a wet & hot season produces violent ~~fevers~~ & Dysenteries. Dr Hillary says the diseases of Barbadoes are more inflamd: in a hot & dry than in a hot & wet season. The same thing is taken notice of by Dr Dazelle. The highly inflamy type of the yellow fever in 1793 which so uniform=ly required copious Vs: - ~~was accompanied~~ ~~followed an uncom=~~ ~~=monly dry summer.~~ was preceded & accom=panied by uncommonly dry weather. Had moisture accompd that heat, the fever wd:

they often carry with them for that purpose. The heat of a close stove room produces the same effect, and it is only to be removed by promoting the evaporation of water in the room. It would seem as if a certain portion of moisture in the air was absolutely necessary to its being fit for respiration. V

Moisture varies the effects of heat upon the body. When the temperature of the air rises to be equal or nearly equal to that of the body, it refuses to conduct off the heat of the body, hence such an accumulation of heat, & perspiration take place as

probably been less openly inflam.d - or would have appeared in the form of a malignant Dysentery, that might have forbidden VS.

V & all writers on West India diseases say the same thing. ~~& Dr~~ Dr Wintringham in his Epidemics says that seasons long & uniformly rainy in England, were uncommonly healthy. In some parts of the world, the moisture, or rather mist exhaled from the sea, produces a peculiar effect upon the temper, known in England by the name of Sea fret. It is common in north: in Engl.d & in Barcelona in Spain. It continues for four or five days, & during which time perishness or listfulness is universal among the inhabitants of those countries.

lay the foundation for many diseases.
When ~~this moisture of~~ the temperature of the air is consi-
derably below the heat of the body,
it is seldom attended with any mor-
bid effects. D^r Hunter says the wet
seasons in Jamaica are not unhealth-
thy where the inhabitants are not
exposed to any morbid exhalations.
A temperate air joined with mois-
ture has a peculiar effect upon
the skin. It imparts to it its beau-
tiful red and white complexion.
The fine Complexions of the natives
of England & Ireland are owing
chiefly to the constant moisture
of those Countries, for there falls

(1) In Lower at Cumana in South America, the intense heat of the Sun produces a disease of a very different kind from those which it induces in the East Indies, & in the Southern parts of Europe. It is known among the Natives by the name of Vecka - or the worm. It is a fixed and exquisite pain in the Rectum which terminates speedily in a mortification & Death. no Woman attends it. Its remedy Baron Humboldt informed me was a piece of a fresh lime thrust up the anus.

2 The Heats of Insolation is uncommon

in Jamaica, in Sept? in 1704 many people & cattle horses & oxen perished in the fields from it. In ~~China~~ Pekin in 1743. 11,000 people perished from it between the 14. & 25. of July. Nearly 67. O

A Frenchman in this city lost his ear for music, & his touch of a musical cord by a stroke of the sun.